NORTH CAROLINA
Department of Transportation









Contract Administration Issues

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October 2018

Contract Administration Topics

Goals:

- To ensure we are administering consistently across all Divisions.
- Identify provisions / specifications that may need to be modified.
- Discuss Pro's and Con's of business practices

Earthwork Truck Measurements

What is the intent of the word capacity regarding the measurement and payment of borrow when measured by truck measurements?

- Some areas have been interpreted as weight capacity of the truck even if the volume capacity is larger.

Earthwork Truck Measurements

- Subarticle 230-5 (B) Truck Measurement
- *Borrow Excavation* to be paid will be the actual number of cubic yards of approved material, measured in trucks excavated from the borrow source and incorporated into the completed and accepted work. Each truck will be measured and shall have a legible identification mark indicating its capacity. Load each truck to at least its measured capacity at the time it arrives at the point of delivery. The recorded capacity will be adjusted by making a 25% deduction to allow for shrinkage and the adjusted capacity will be the quantity to be paid.

Earthwork Truck Measurements – Cont.

From the *Construction Manual*

- Two methods of measurement may be used in determining the quantity of borrow material utilized. In-place at the source measurement will be used unless truck measurement is specified in the contract or becomes necessary due to unusual circumstances. When truck measurement is utilized, the volume of the bed hoist box must be deducted from the overall volume of the truck bed. The technicians should ensure the trucks are completely unloaded.

Earthwork Truck Measurements – Cont.

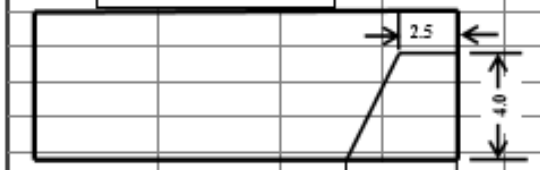
PAY RECORD BOOK ENTRY EXAMPLE

Line Code #17 Borrow Excavation - Truck Measurements *23,345 CY @ $12.60* *45*

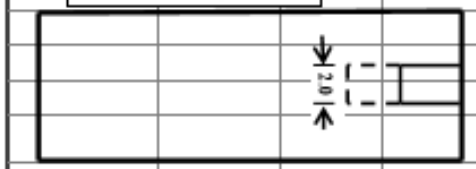
Truck (Number)	Length (Feet)	Width (Feet)	Height (Feet)	Hoist Deduct* (CF)	- 25% Shrinkage (CY)	Pay Qty. (CY)	Date	Initials	Remarks Hoist Volume
TY-08	14.0	6.5	3.6	25.2	2.80	8.40	8-19-07	HRT	Deduct* = [(2.5+3.8)÷2]' x 4 x 2 = 25.2 CF
TY-09	14.0	6.5	3.6	25.2	2.80	8.40	8-19-07	HRT	Deduct* = [(2.5+3.8)÷2]' x 4 x 2 = 25.2 CF
TY-12	16.0	7.0	3.6	24.0	3.51	10.53	8-19-07	HRT	Deduct* = [(2.4+3.6)÷2]' x 4 x 2 = 24.0 CF
TY-04	14.0	6.5	3.6	25.6	2.80	8.39	8-19-07	HRT	Deduct* = [(3.0+4.1)÷2]' x 3.6 x 2 = 25.6 CF
TY-06	14.0	6.5	3.6	26.4	2.79	8.37	8-19-07	HRT	Deduct* = [(3.0+3.6)÷2]' x 4 x 2 = 26.4 CF
TY-23	16.0	7.0	3.6	25.6	3.50	10.49	8-19-07	HRT	Deduct* = [(2.4+4.0)÷2]' x 4 x 2]' = 25.6 CF
PT-4	16.0	7.0	3.8	26.5	3.70	11.098	6-19-07	JQT	Deduct* = [(2.5+3.8)÷2]' x 4.8 x 2]' = 26.5 CF
PT-6	16.0	7.0	3.8	26.9	3.69	11.08	6-19-07	JQT	Deduct* = [(2.5+3.9 ÷ 2]' x 4.8 x 2 =26.9 CF
PT-9	16.0	7.0	3.8	26.9	3.69	11.08	6-19-07	JQT	Deduct* = [(2.5+3.8) ÷ 2]' x 4.8 x 2 = 26.9 CF

Note: Measurement of Trucks should be placed in the front of *each* Pay Record Book where the truck is shown. The truck hoist measurements shown are an example, each truck should be measured individually.

Truck bed Side View



Truck bed Top View



Truck Hoist Volume Calculation:

$$\left[\frac{2.5\ ft + 3.8\ ft}{2}\right] \times 4\ ft \times 2\ ft = 25.2\ CF$$

Standard Calculation for Truck # TY-08:

$$\left[\frac{(14\ ft \times 6.5\ ft \times 3.6\ ft) - 25.2\ CF}{27\ CF/CY}\right] \times 0.75 = 8.40\ CY$$

Checked By: MLT Date: 6-19-07

Earthwork Truck Measurements – Cont.

PAY RECORD BOOK ENTRY EXAMPLE

Line Code #17 Borrow Excavation — 23,345 Cy @ $12.60 — 46

Truck #	Cy Truck	No. Loads		Total Cy			Date	Initials	Remarks
H-08	12.3	14		172.0			4-16-07	JFB	Fill Sta. 835+00 - 845+00 -L- Rt.
H-01	11.5	23		264.5			4-16-07	JFB	
Ty-03	11.1	19		210.9			4-16-07	JFB	
Ty-45	10.4	17		176.8			4-16-07	JFB	
H-5	8.7	23		200.1			4-16-07	JFB	
H-9	8.9	17		151.3			4-16-07	JFB	
H-23	13.3	11		146.3			4-16-07	JFB	
Ty-17	11.3	8		90.4			4-16-07	JFB	Fill Sta. 835+00 - 845+00 -L- Rt.
BS-8	14.1	19		267.9			4-19-07	DEJ	Fill Sta. 10+00 - 19+00 Rt. & -Y- Rt.
BS-45	14.1	17		239.7			4-19-07	DEJ	Fill Sta. 10+00 - 19+00 Rt. & -Y- Rt.
Ty-03	11.1	16		177.6			4-20-07	CGH	Fill Sta. 865+23 - 868+50 -L- Rt.
Ty-45	10.4	23		239.2			4-20-07	CGH	
H-23	13.3	19		252.7			4-20-07	CGH	
BS-8	14.1	20		282.0			4-20-07	CGH	Fill Sta. 865+23 - 868+50 -L- Rt.
B-01	11.4	2		22.8			4-25-07	JRY	Backfill Drainage Sts. 14, 15, 15A, 16
H-5	8.7	21		182.7			4-28-07	JFB	Backfill for H-Pile Wall Sta. 345+65-L-
H-9	8.9	19		169.1			4-28-07	JFB	Backfill for H-Pile Wall Sta. 345+65-L-
		Page	Total:	3040.5	Cy		5-07-07	MKT	
									Checked By: MLT
									Date: 5-15-07

Is a spreader box always required for ABC?

- Article 520-5 Hauling and Placing Aggregate Base Course
  - Place the aggregate material on the subgrade with a mechanical spreader capable of placing the material to a uniform loose depth and without segregation; except for areas inaccessible to a mechanical spreader box, the aggregate material may be placed by other methods approved by the Engineer.
  - End dumping on sandy soil subgrade to reduce wheel rutting.
  - End dumping will be limited to 2 to 3 inches prior to placing the remaining aggregate thickness with a mechanical spreader box.

Is a spreader box always required for ABC?

- What about those small walking trails, where the contractor might have planned to construct the project with a skid-steer rather than a dozer?
- Greenways and Multi-Use Paths Project Special Provision
  - Modifies requirements for Embankments, Fine Grading Subgrade, Aggregate Subgrade, Aggregate Base Course, Asphalt Concrete Plant Mix Pavements, and Concrete Sidewalks.

GREENWAYS AND MULTI-USE PATHS:

(2-15-18) 2-300

Description

This special provision provides for revisions to the *2018 Standard Specifications* for work on a greenway or multi-use path not designed or intended to carry highway traffic.

Materials

Refer to the *2018 Standard Specifications* except as noted in these Special Provisions. Use materials on the NCDOT Approved Products List (APL) where applicable.

Construction Methods

Construct Greenway in accordance with the contract plans, *2018 Standard Specifications* except as noted below:

SECTION	ARTICLE	PAGE	REVISION
235: Embankments	235-3(C): Embankment Compaction	2-24	**Delete first sentence and replace with the following:** Compact each layer for its full width to a density equal to at least 90% of that obtained by compacting a sample of the material in accordance with AASHTO T 99 as modified by the Department.
500: Fine Grading Subgrade	500-2(C): Compaction of Subgrade	5-1	**Delete first sentence and replace with the following:** Compact all material to a depth of up to 8 inches below the finished surface of the subgrade to a density equal to at least 92% of that obtained by compacting a sample of the material in accordance with AASHTO T 99 as modified by the Department.
500: Fine Grading Subgrade	500-3: Tolerances	5-2	**Delete Article 500-3 and replace with the following:** A tolerance of plus or minus one inch from the established greenway grade will be permitted after the subgrade has been graded to a uniform surface.
505: Aggregate Subgrade	505-3: Construction Methods	5-8	**Delete first paragraph and replace with the following:** Perform shallow undercut up to 12 inches as necessary to remove unsuitable material. If necessary, install geotextile for soil stabilization in accordance with Article 270-3. Place Class III select material or Class IV subgrade stabilization (standard size no. ABC) by end dumping on geotextiles. Do not operate heavy equipment on geotextiles until geotextiles are covered with Class III or ABC. Compact ABC to 92% or to the highest density that can be reasonably attained.
520: Aggregate Base Course	520-7: Shaping and Compaction	5-11	**Delete first sentence in second paragraph and replace with the following:** For both nuclear and ring tests, compact each layer of the base to a density equal to at least 92% of that obtained by compacting a sample of the material in accordance with AASHTO T 180 as modified by the Department. **Delete the third paragraph.**
610: Asphalt Concrete Plant Mix Pavements	610-10: Density Requirements	6-23	**Delete Article 610-10 and replace with the following:** Compact the asphalt plant mix to at least 85% of the maximum specific gravity.
610: Asphalt Concrete Plant Mix Pavements	610-13: Final Surface Testing and Acceptance	6-24	**Delete Article 610-13.**
848: Concrete Sidewalks	848-3: Construction Methods	8-31	**Delete second paragraph and replace with the following:** Construct concrete greenway based on the typical sections in the plans. Place groove joints at a spacing equal to the width of the greenway. Transverse Expansion Joints are required every 40 feet.

Supplemental Agreements to Pay Plan Quantity for Earthwork

- Being performed more often to save on internal surveying cost
- Pays Plan Quantity for the Unclassified Excavation
- Keeps unit price for Unclassified Excavation (does not switch to Lump Sum)
- SA description should include
  - Consideration for Fuel Adjustment provision
  - How it will paid on a partial estimate
  - Rock Undercut in cut sections
  - Reference to Article 102-6 " Examination of Plans, Specifications, Contract, and Site of Work"

Contract: C204105 **Supplemental Agreement Number:** 1.0

County/Counties: Wake **Federal Aid Number:** STP-0401(249)

Contractor: FSC II LLC DBA FRED SMITH COMPANY

1. Description, location, and justification for change:

"UNCLASSIFIED EXCAVATION" PLAN QUANTITY WITH ASSOCIATED FUEL ADJUSTMENT - This Supplemental Agreement revises the method of measurement for the item of work, "Unclassified Excavation". All work shall be performed in accordance with Section 225 of the 2018 NCDOT Standard Specifications for Roads and Structures, except that the provisions pertaining to Measurement and Payment will not apply.
Article 225-7, "Measurement and Payment," is revised as follows:
The quantity of Unclassified Excavation (Line Code #255) to be paid for will be the contract bid quantity (164,000.00 CY). If the Department revises the plans such that the quantity of Unclassified Excavation is altered, the contract bid quantity of 164,000.00 CY will be adjusted in accordance with the plan revision. The amount of unclassified excavation to be paid on each partial payment estimate will be equal to the number of cubic yards moved as estimated by the Engineer. The current monthly estimated quantity will be utilized for the associated monthly fuel adjustment described in the Contract Project Special Provisions and Article 109-8 of the 2018 Standard Specifications.
All materials excavated from a location below the graded roadway cross section are classified as Undercut Excavation and will be measured separately except for the following:

(A) Rock in the bottom of roadway cuts excavated 1 foot or less below the roadbed and ditches. (B) In cut areas, undercut excavation is limited to excavation removed below the roadbed sub-grade, removed below the inside slopes of roadway ditches, and removed below the bottom of flat bottom roadway ditches.
(C) Rootmat removed as part of clearing and grubbing.
In cut sections where rock is encountered within 12" of subgrade, these areas will be undercut to a depth of 12" below subgrade. These areas will be measured and paid as unclassified excavation at a rate of $6.00/CY, as stated in the contract. Measurement of materials excavated from overbreaks or slides will be made except where overbreaks or slides were due to the negligence or carelessness of the Contractor.

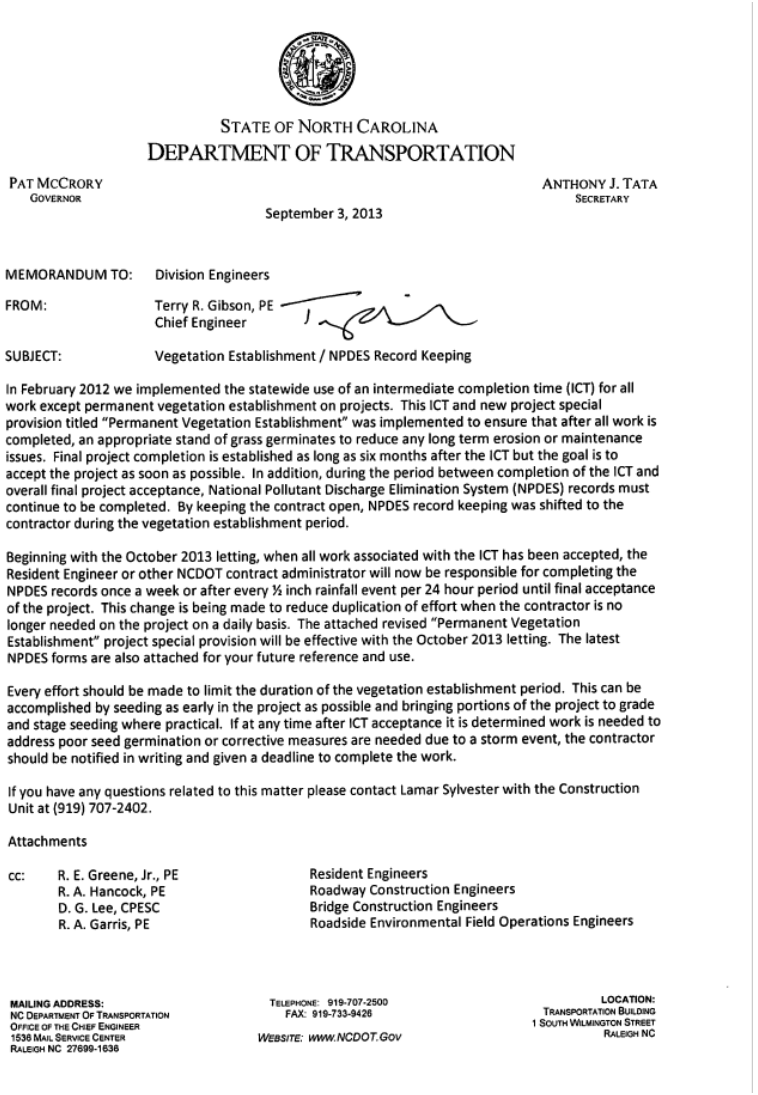
Payment for material that the Engineer directs to be removed beyond the limits of the original slope stakes will be made in accordance with Article 104-3. No separate payment will be allowed for material used to backfill undercut areas unless all suitable unclassified material has been incorporated into the project.

Payment includes but is not limited to excavation, blasting, hauling anywhere along the project both within and across balance points shown on the plans, removal of undesirable material, removal of sidewalk, driveways, curb and gutter, endwalls, traffic islands and drainage structures, disposal of materials, formation and compaction of embankments, subgrades and shoulders, the cutting off, plugging, and removal of private utility lines and underground tanks and any backfilling required, removing any existing shoulder drain or subdrain pipe and maintaining the work.
Whereas, the Department and the Contractor agree that the sufficiency and accuracy of earth material quality and bid quantity are not guaranteed; and whereas, the Contractor confirms agreement and compliance with the provisions of Article 102-6, "Examination of Plans, Specifications, Contract, and Site of Work"; therefore, the Contractor waives all rights to submit claims for additional compensation and/or extensions in contract time for any overruns/underruns in actual quantities from the "Unclassified Excavation" bid quantity, detailed herein, or for material

Vegetation Establishment / NPDES Record Keeping

- Chief Engineer Gibson's September 3, 2013 Memo to Divisions
  - Beginning with October 2013 Letting, when all work associated with the ICT has been accepted, the Resident Engineer or other NCDOT contract administrator will now be responsible for completing the NPDES records once a week or after every ½ inch rainfall event per 24 hour period until final acceptance of the project. This change is being made to reduce duplication of effort when the contractor is no longer needed on the project on a daily basis.

Vegetation Establishment / NPDES Record Keeping



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

September 3, 2013

MEMORANDUM TO: Division Engineers

FROM: Terry R. Gibson, PE
Chief Engineer

SUBJECT: Vegetation Establishment / NPDES Record Keeping

In February 2012 we implemented the statewide use of an intermediate completion time (ICT) for all work except permanent vegetation establishment on projects. This ICT and new project special provision titled "Permanent Vegetation Establishment" was implemented to ensure that after all work is completed, an appropriate stand of grass germinates to reduce any long term erosion or maintenance issues. Final project completion is established as long as six months after the ICT but the goal is to accept the project as soon as possible. In addition, during the period between completion of the ICT and overall final project acceptance, National Pollutant Discharge Elimination System (NPDES) records must continue to be completed. By keeping the contract open, NPDES record keeping was shifted to the contractor during the vegetation establishment period.

Beginning with the October 2013 letting, when all work associated with the ICT has been accepted, the Resident Engineer or other NCDOT contract administrator will now be responsible for completing the NPDES records once a week or after every ½ inch rainfall event per 24 hour period until final acceptance of the project. This change is being made to reduce duplication of effort when the contractor is no longer needed on the project on a daily basis. The attached revised "Permanent Vegetation Establishment" project special provision will be effective with the October 2013 letting. The latest NPDES forms are also attached for your future reference and use.

Every effort should be made to limit the duration of the vegetation establishment period. This can be accomplished by seeding as early in the project as possible and bringing portions of the project to grade and stage seeding where practical. If at any time after ICT acceptance it is determined work is needed to address poor seed germination or corrective measures are needed due to a storm event, the contractor should be notified in writing and given a deadline to complete the work.

If you have any questions related to this matter please contact Lamar Sylvester with the Construction Unit at (919) 707-2402.

Attachments

cc: R. E. Greene, Jr., PE — Resident Engineers
R. A. Hancock, PE — Roadway Construction Engineers
D. G. Lee, CPESC — Bridge Construction Engineers
R. A. Garris, PE — Roadside Environmental Field Operations Engineers

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
OFFICE OF THE CHIEF ENGINEER
1536 MAIL SERVICE CENTER
RALEIGH NC 27699-1536

TELEPHONE: 919-707-2500
FAX: 919-733-9426
WEBSITE: www.NCDOT.Gov

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

Section 607 Milling Asphalt Pavement

Milling Asphalt Pavement __" Depth

- Areas to be paid under these items include
  - Mainline
  - Turn lanes
  - Shoulders
  - And any additional equipment necessary to remove pavement in the area of manholes, water valves, curb, gutter, and other obstructions.

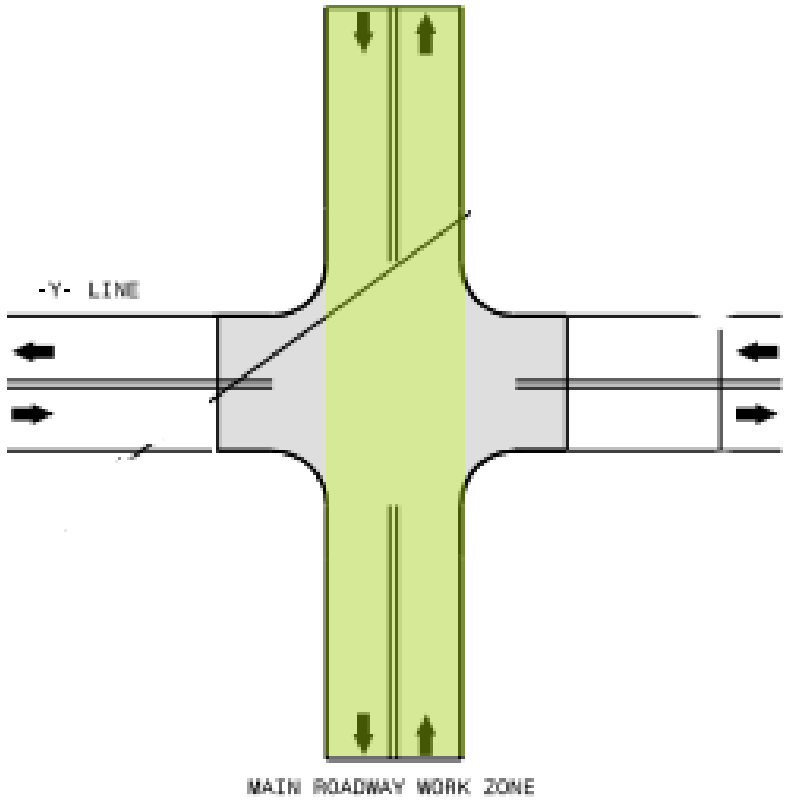
Think "Production Milling"

Incidental Milling

- Areas to be paid
  - Required to mill butt joints
  - Irregular areas
  - Intersections milled as a separate operation from mainline
  - Re-mill areas < 100'

Think "Non-production milling"

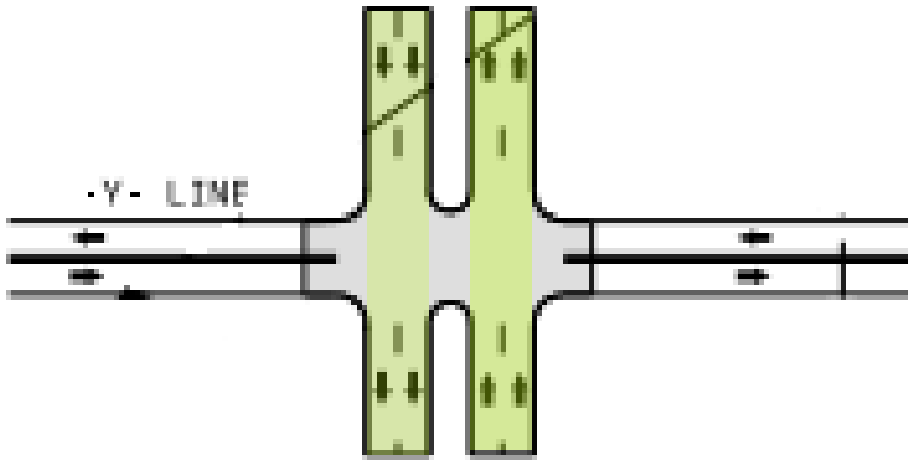
Section 607 Milling Asphalt Pavement



-Y- LINES

- Light green considered production milling
- Grey considered incidental milling

Section 607 Milling Asphalt Pavement



-Y- LINES

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Non-Tracking Tack Coats

Chief Engineer Holder's August 9, 2016 memo

- Good tool to consider when a critical need to minimize tracking directly adjacent to route being paved.
- Hot Applied non-tracking tack coat products are very specialized, and are used as an alternate for UTBWC and OGFC.
  - Only recommended on these thin lifts due to cost.

Non-Tracking Tack Coat

Chief Engineer Holder's August 9, 2016 memo

- Asphalt emulsion non-tracking tack cannot be used in same tanks as traditional tack. These products require the contractor to have separate storage tanks and separate distributers.
  - Additional costs and time
- Use of asphalt emulsion non-tracking tack should be used on case by case basis.

Utility Adjustments- Section 858

There is a concern that this Section of the Specifications is being administered differently across the State.

How would the group like to see this provision changed, so that it is consistent across the State?

What is the goal?

To have the utility adjustments as flush as possible with the final surface layer?

Is this best accomplished after the pavement has been resurfaced?

Utility Adjustments- Section 858

Let's consider the adjustments when milling is involved?

How would the group like to see this provision changed, so that it is consistent across the State?

What is the goal?

To have the utility adjustments as flush as possible with the final surface layer?

Is this best accomplished after the pavement has been resurfaced?

If they mill around the manhole and never perform any work on the structure, are they due any adjustment?

Utility Adjustments- Section 858

Article 858-3 Construction Methods

"~~Make the adjustments before the final layer of surfacing material is placed in areas to be surfaced or resurfaced.~~ Salvage and reuse existing frames, grates, manhole covers, rings, meter boxes and valve boxes in the adjustment."

Article 858-4 Measurement and Payment

"Where any catch basin, drop inlet, manhole, meter box, or valve box is adjusted more than once because of milling operations, multiple adjustments will be counted as one adjustment."

Utility Adjustments- Section 858

Article 858-3 Construction Methods

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